N-Channel JFET

–25 V, 20 to 40 mA, 40 mS, Dual

NSVJ6904DSB6

The NSVJ6904DSB6 is a composite type of JFET designed for compact size and high efficiency which can achieve high gain performance. This AEC−Q101 qualified and PPAP capable device is suited for automotive applications.

Features

- Large | yfs |
- Small Ciss
- Ultralow Noise Figure
- CPH6 Package is Pin−Compatible with SC−74
- AEC−Q101 Qualified and PPAP Capable
- Mounting Area is Greatly Reduced by Incorporating Two JFETs of the NSVJ3910SB3 in One Package of CPH6 Compared with Using Two Separate Packages

Typical Applications

- AM Tuner RF Amplification
- Low Noise Amplifier

Specifications

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

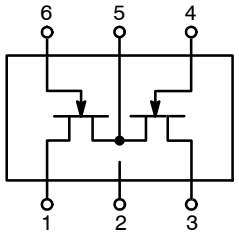
Parameter	Symbol	Value	Unit
Drain to Source Voltage	V_{DSX}	25	V
Gate to Drain Voltage	V_{GDS}	−25	V
Gate Current	I_G	10	mA
Drain Current	I_D	50	mA
Allowable Power Dissipation 1 unit	P_D	400	mW
Total Power Dissipation	P_T	700	mW
Operating Junction and Storage Temperature	T_J, T_{Stg}	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ON Semiconductor®

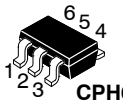
www.onsemi.com

ELECTRICAL CONNECTION
N−Channel



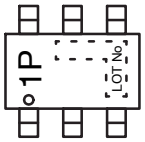
1 : Drain 1
2 : NC
3 : Drain 2
4 : Gate 2
5 : Source 1 / Source 2
6 : Gate 1

MARKING DIAGRAM



CPH6

CASE 318BD



ORDERING INFORMATION

See detailed ordering, marking and shipping information in the package dimensions section on page 4 of this data sheet.

© Semiconductor Components Industries, LLC, 2017

ELECTRICAL CHARACTERISTICS (T_J = 25°C, (Note 1))

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Gate to Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G = −10 μA, V_{DS} = 0 V	−25	–	–	V
Gate to Source Leakage Current	I_{GSS}	V_{GS} = −10 V, V_{DS} = 0 V	–	–	−1.0	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 5 V, I_D = 100 μA	−0.6	−1.2	−1.8	V
Zero−Gate Voltage Drain Current	I_{DSS}	V_{DS} = 5 V, V_{GS} = 0 V	20	–	40	mA
Forward Transfer Admittance	| yfs |	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 kHz	30	40	–	mS
Input Capacitance	Ciss	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 MHz	–	6.0	–	pF
Reverse Transfer Capacitance	Crss		–	2.3	–	pF
Noise Figure	NF	V_{DS} = 5 V, V_{GS} = 0 V, f = 100 MHz	–	2.1	2.8	dB

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. The specifications shown above are for each individual JFET.

CHARACTERISTICS

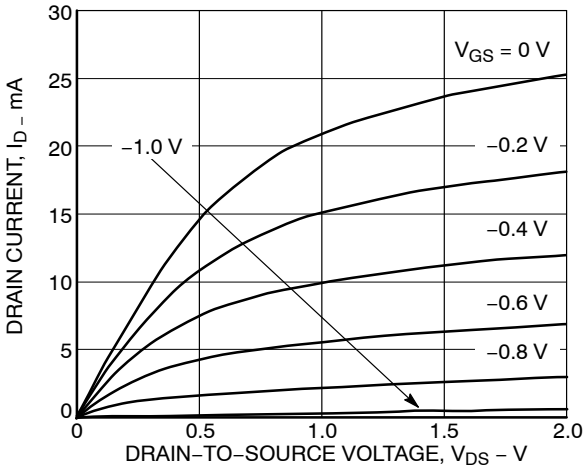


Figure 1. I_D – V_{DS}

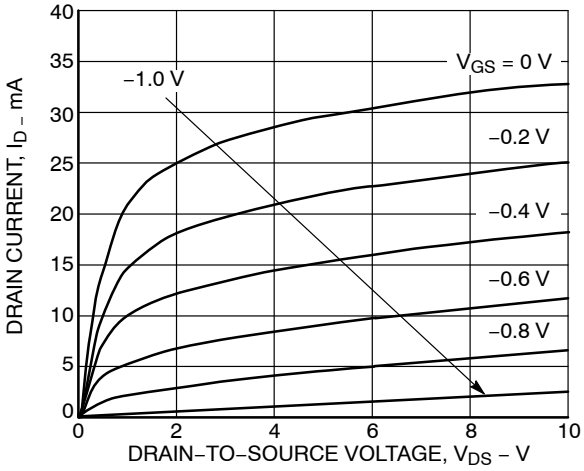


Figure 2. I_D – V_{DS}

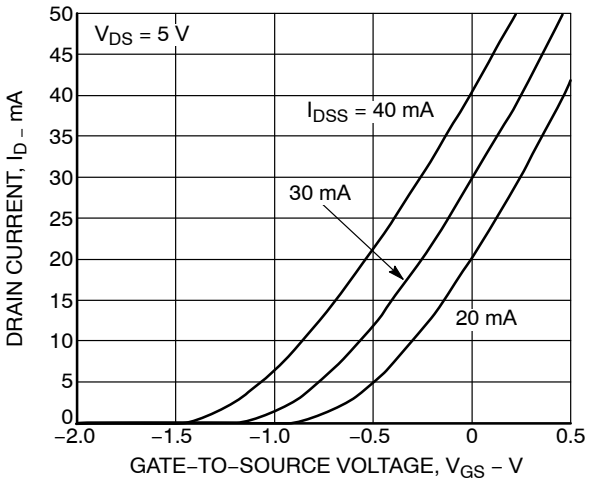


Figure 3. I_D – V_{GS}

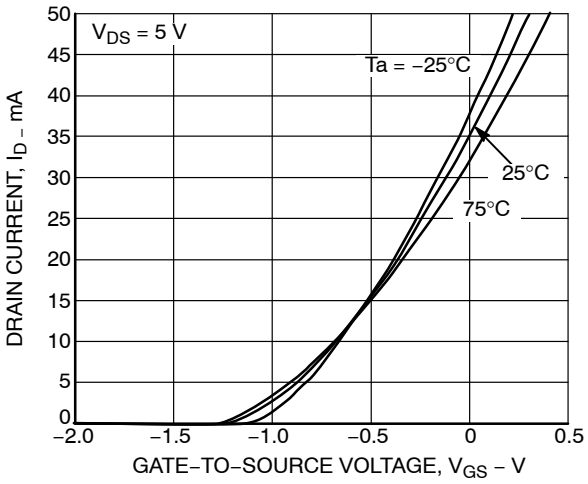


Figure 4. I_D – V_{GS}

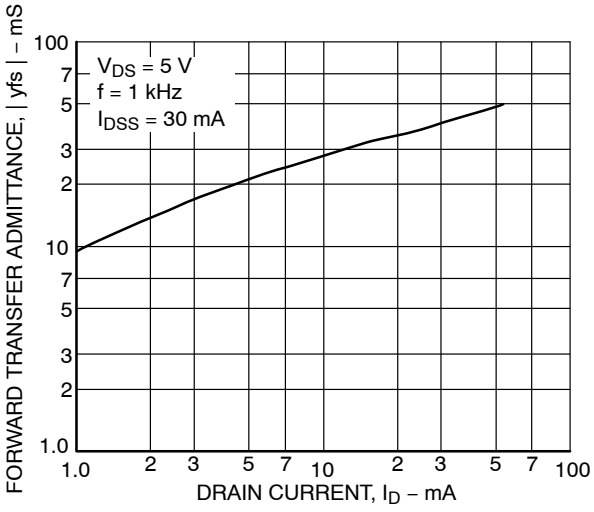


Figure 5. | yfs | – I_D

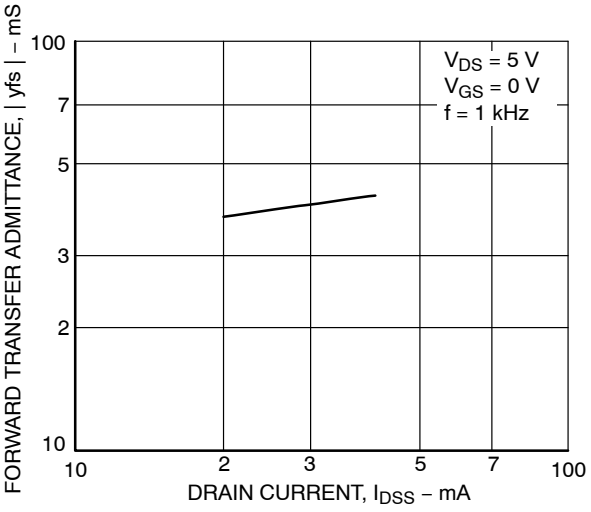


Figure 6. | yfs | – I_{DSS}

CHARACTERISTICS

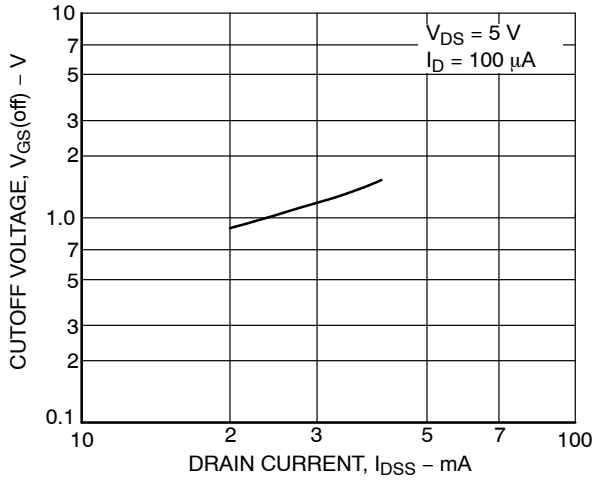


Figure 7. V_{GS}(off) – I_{DSS}

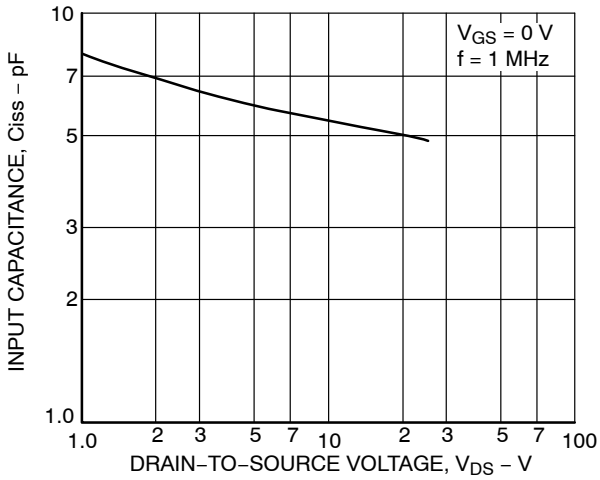


Figure 8. Ciss – V_{GDS}

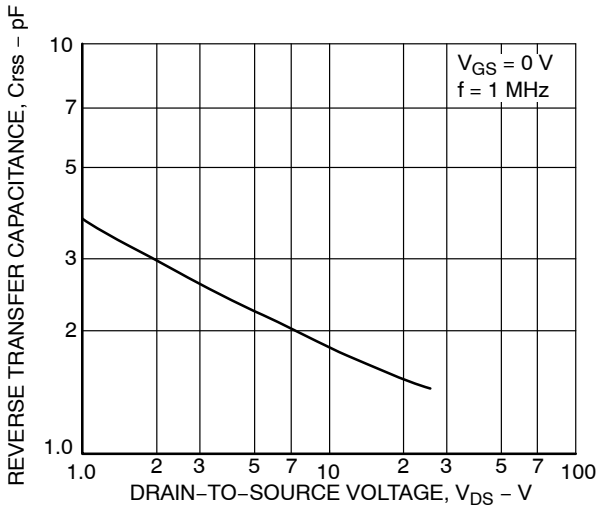


Figure 9. Crss – V_{DS}

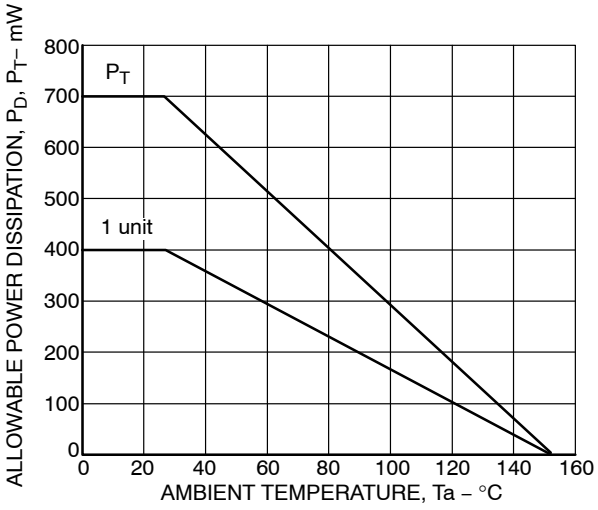


Figure 10. P_D, P_T – Ta

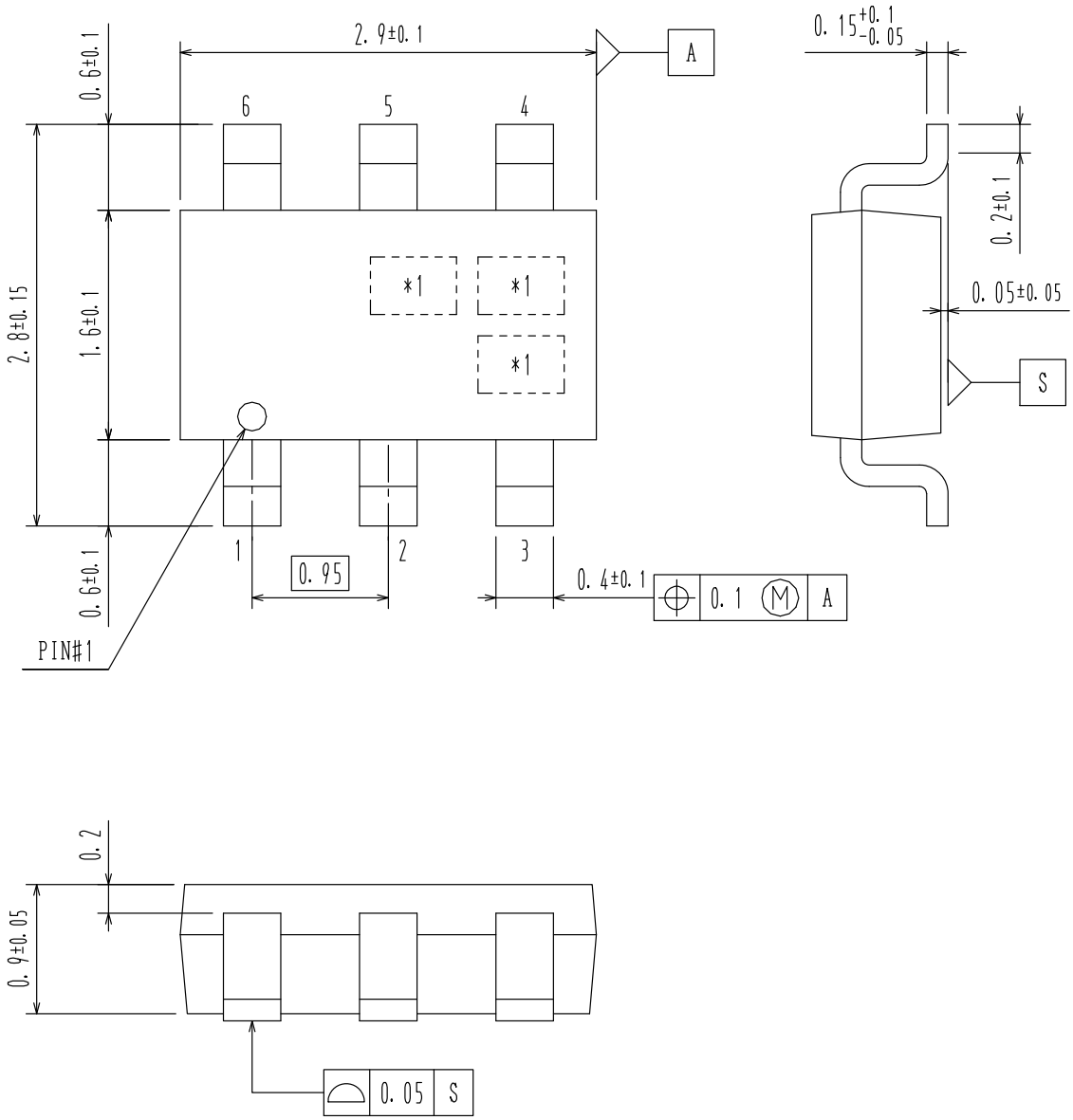
ORDERING INFORMATION

Device Order Number	Specific Device Marking	Package Type	Shipping†
NSVJ6904DSB6T1G	1P	CPH6 (Pb–Free / Halogen Free)	3,000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

CPH6
CASE 318BD
ISSUE O

DATE 30 NOV 2011



DOCUMENT NUMBER:	**98AON65440E**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	**CPH6**	**PAGE 1 OF 1**

ON Semiconductor and ON are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

© Semiconductor Components Industries, LLC, 2019

onsemi, ONSEMI , and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent−Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as−is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

onsemi Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

◊